



Dart Hawkesbury  
1270 Aberdeen St Hawkesbury, ON K6A 1K7 Canada  
Tel (613) 632-5200

## Purchasing Receipts

PO No	Supplier	Line Item No	Rel No	Terms	Purchased Item	Description	For Part No	Project	Equipment ID	Order Qty	Due Date	Received Quantity	Accounting Job No	Container No	Status	Receive Date	Price/Unit	Aging Days	Past Due	Total	Supplier Name
PO039799	MCM001-VU	1	1	2% 10 Net 30	90985A113	Knob Grip				6	5/8/2018	6		S069399	Stock	5/8/2018	\$ 20.45 / Ea	0		\$122.70	McMaster-Carr Supply Co.
		2			91247A122	Bolt receive ea				50		50		S069400	Stock	5/8/2018	\$ 0.40 / Ea	0		\$19.88	McMaster-Carr Supply Co.
		3			91247A740	Hex Head Screw				10		10		S069440	Stock	5/8/2018	\$ 2.05 / Ea	0		\$20.48	McMaster-Carr Supply Co.
		4			98407A132	Retaining Ring receive pcs				100		100		S069401	Stock	5/8/2018	\$ 0.06 / pcs	0		\$6.33	McMaster-Carr Supply Co.
		5			92196A341	socket head screw 5/16"-24				25		25		S069441	Stock	5/8/2018	\$ 0.37 / Ea	0		\$9.28	McMaster-Carr Supply Co.
		6			9657K122	Ø0.437 OD x Ø0.054 WIRE x 2, 15.54 LBS/LN. SPRING receive ea				12		12		S069402	Stock	5/8/2018	\$ 0.60 / Ea	0		\$7.22	McMaster-Carr Supply Co.
		7			2416K97	301 SS Strip, Fatigue-Resistant				20		20		S069442	Stock	5/8/2018	\$ 3.83 / ft	0		\$76.52	McMaster-Carr Supply Co.
		8			1217T42	301 SS Sheet, Fatigue-Resistant				3		3		S069455	Stock	5/8/2018	\$ 18.09 / sf	0		\$54.28	McMaster-Carr Supply Co.
		9			1217T45							3		S069456	Stock	5/8/2018	\$ 31.74 / sf	0		\$95.21	McMaster-Carr Supply Co.
		10			3777T12	Spring Catch receive ea				4		4		S069403	Stock	5/8/2018	\$ 11.52 / Ea	0		\$46.08	McMaster-Carr Supply Co.
		11			89895K451	Smooth-Bore Seamless 304 SS Tubing, 3/8" OD, 0.049" Wall Thickness						4		S069404	Stock	5/8/2018	\$ 8.57 / Ea	0		\$34.28	McMaster-Carr Supply Co.

PO No	Supplier	Line Item No	Rel No	Terms	Purchased Item	Description	For Part No	Project	Equipment ID	Order Qty	Due Date	Received Quantity	Accounting Job No	Container No	Status	Receive Date	Price/Unit	Aging Days	Past Due	Total	Supplier Name
		12			90146A059	P/n Bent-Pull Clevis Pin with Hairpin Cotter P/n 5/16" Dia, 2-1/2" Usable Length				7		7		S069405	Stock	5/8/2018	\$ 2.59 / Ea	0		\$18.13	McMaster-Carr Supply Co.
		13			93695K58	Window Seal				50		50		S069406	Inactive	5/8/2018	\$ 0.32 / ft	0		\$16.15	McMaster-Carr Supply Co.
		14			MT-BRONZE-C63000-R1.000	Bronze C63000 Round Bar 1.000" : MAT'L AS PER BRONZE C63000 AS PER ANS 4640 OR ASME SB150 OR ASTM B150 OR SAE J461 OR SAE J463				6		2		S069340	Stock	5/8/2018	\$ 56.84 / ft	0		\$113.68	McMaster-Carr Supply Co.
												4		S069449	Inactive	5/8/2018	\$ 56.84 / ft	0		\$227.36	McMaster-Carr Supply Co.
		15			MT-BRONZE-C63000-R1.250	Bronze C63000 Round Bar 1.25" : MAT'L AS PER BRONZE C63000 AS PER ANS 4640 OR ASME SB150 OR ASTM B150 OR SAE J461 OR SAE J463						1		S069341	Stock	5/8/2018	\$ 85.67 / ft	0		\$85.67	McMaster-Carr Supply Co.
												5		S069448	Stock	5/8/2018	\$ 85.67 / ft	0		\$428.33	McMaster-Carr Supply Co.
		16			MT-NYLON 6-R1.000-B	Nylon 6 Black Round Bar 1.000" Dia.						6		S069407	Stock	5/8/2018	\$ 15.43 / ft	0		\$92.58	McMaster-Carr Supply Co.

PO No	Supplier	Line Item No	Rel No	Terms	Purchased Item	Description	For Part No	Project	Equipment ID	Order Qty	Due Date	Received Quantity	Accounting Job No	Container No	Status	Receive Date	Price/Unit	Aging Days	Past Due	Total	Supplier Name		
		17			MBRONZR1.000	Bronze Round Bar 1.000" MATERIAL: OIL IMPREGNATED SINTERED BRONZE ROUND BAR AS PER SAE 841 TYPE 1, CLASS A OR AMS 4805 OR ASTM B438 GRADE 1, TYPE 2 OR MIL-B-5687D TYPE 1, GRADE 1 receive ft				2		2		S069443	Stock	5/8/2018	\$ 60.19 / ft	0		\$130.60	McMaster-Carr Supply Co,		
Total:											314											\$1,604.76	

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Dart Aerospace Ltd.  
1270 Aberdeen St  
Hawkesbury, ON  
K6A 1K7  
Canada

Tel (613) 632-5200

# **PURCHASE ORDER** **PO039799**

**Supplier:** MCM001-VU  
McMaster-Carr Supply Co,  
P.O. Box 7690  
Chicago, IL 60680-7690 USA  
Phone: 330 995 5500  
Fax: 330 995 9600

**PO No:** PO039799

**PO Date:** 5/4/18

**Due Date:** 5/8/18

**Purchase Order**

**Revision:**

**Revision Date:**

**Ship-To Contact:** Lavoie, Chantal  
clavoie@dartaero.com

**E-MAILED**  
MAY 04 2018

**Ship To:** 1270 Aberdeen Street  
Hawkesbury  
ON  
K6A 1K7 Canada  
Phone: 613-632-5200

**Via:** Ground

**Pynt Terms:** 2% 10 Net 30

**Freight Terms:**

**Special Comments:**

## Items

Line Item	Part	Supplier Part No	Description	Status	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (USD)	Extended Price
1	90985A113	1/pk	Knob Grip	Firmed	5/8/18	6 Ea	0 Ea	6 Ea	\$20.45/Ea	\$122.70
2	91247A122	25/pk	Bolt receive ea	Firmed	5/8/18	50 Ea	0 Ea	50 Ea	\$0.3976/Ea	\$19.88
3	91247A740	5/pk	Hex Head Screw	Firmed	5/8/18	10 Ea	0 Ea	10 Ea	\$2.048/Ea	\$20.48
4	98407A132	100/pk	Retaining Ring receive pcs	Firmed	5/8/18	100 pcs	0 pcs	100 pcs	\$0.0633/pcs	\$6.33
5	92196A341	25/pk	socket head screw 5/16"-24	Firmed	5/8/18	25 Ea	0 Ea	25 Ea	\$0.3712/Ea	\$9.28
6	9657K122	12/pk	Ø0.437 OD x Ø0.054 WIRE x 2, 15.54 LBS/IN. SPRING receive ea	Firmed	5/8/18	12 Ea	0 Ea	12 Ea	\$0.601666/Ea	\$7.22
7	2416K97		301 SS Strip, Fatigue-Resistant	Firmed	5/8/18	20 ft	0 ft	20 ft	\$3.826/ft	\$76.52
<b>Line Item Note</b> 2 pcs of 10 ft										
8	1217T42	3sf / pcs	301 SS Sheet, Fatigue-Resistant	Firmed	5/8/18	3 sf	0 sf	3 sf	\$18.09333/sf	\$54.28
9	1217T45	3sf / pcs	301 SS Sheet, Fatigue-Resistant	Firmed	5/8/18	3 sf	0 sf	3 sf	\$31.73666/sf	\$95.21
10	3777T12	1/pk	Spring Catch receive ea	Firmed	5/8/18	4 Ea	0 Ea	4 Ea	\$11.52/Ea	\$46.08
11	89895K451	8" per pcs	Smooth-Bore Seamless 304 SS Tubing, 3/8" OD, 0.049" Wall Thickness	Firmed	5/8/18	4 Ea	0 Ea	4 Ea	\$8.57/Ea	\$34.28

Items										
Line Item	Part	Supplier Part No	Description	Status	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (USD)	Extended Price
12	90146A059		Pin Bent-Pull Clevis Pin with Hairpin Cotter Pin 5/16" Dia, 2-1/2" Usable Length	Firmed	5/8/18	7 Ea	0 Ea	7 Ea	\$2.59/Ea	\$18.13
13	93695K58		Window Seal	Firmed	5/8/18	50 ft	0 ft	50 ft	\$0.323/ft	\$16.15
Line Item Note wo176557										
14	MT-BRONZE-C63000-R1.000	8203K61 3 FT long	Bronze C63000 Round Bar 1.000" : MAT'L AS PER BRONZE C63000 AS PER ANS 4640 OR ASME SB150 OR ASTM B150 OR SAE J461 OR SAE J463	Firmed	5/8/18	6 ft	0 ft	6 ft	\$56.84/ft	\$341.04
Line Item Note 2 pcs of 3 ft										
15	MT-BRONZE-C63000-R1.250	8203K81 3 FT long	Bronze C63000 Round Bar 1.25" : MAT'L AS PER BRONZE C63000 AS PER ANS 4640 OR ASME SB150 OR ASTM B150 OR SAE J461 OR SAE J463	Firmed	5/8/18	6 ft	0 ft	6 ft	\$85.6666/ft	\$514.00
16	MT-NYLON 6-R1.000-B	2889K21 2 ft length	Nylon 6 Black Round Bar 1.000" Dia.	Firmed	5/8/18	6 ft	0 ft	6 ft	\$15.43/ft	\$92.58
17	MBRONZR1.000	8932K45 6.5" long	Bronze Round Bar 1.000" : MATERIAL: OIL IMPREGNATED SINTERED BRONZE ROUND BAR AS PER SAE 841 TYPE 1, CLASS A OR AMS 4805 OR ASTM B438 GRADE 1, TYPE 2 OR MIL-B- 5687D TYPE 1, GRADE 1 receive ft	Firmed	5/8/18	2.167 ft	0 ft	2 ft	\$60.185185/ft	\$130.42
Line Item Note 4 pcs of 6.5"										
									Grand Total: \$1,604.58	
Order Notes						rec'd AT 18/05/18 CL				
Plex 5/4/18 1:50 PM dart.lavoie.chanta										

**Order Notes**

## Procurement Quality Clauses

A005 RIGHT OF ENTRY

A016 PERSONNEL QUALIFICATION

A026 CERTIFICATION OF MATERIAL CONFORMANCE

A032 PUBLIC LAW 101-592 FASTENER QUALITY ACT

A033 STATEMENT OF CONFORMITY/TEST RECORDS FOR NAS, AN and MS FASTENERS

A040 NOTIFICATION OF QUALITY ESCAPE

A041 QUALITY MANAGEMENT SYSTEM

A042 DART NOTIFICATION BY SUPPLIER

A043 RETENTION OF QUALITY DOCUMENTS

A048 COUNTERFEIT PARTS AVOIDANCE, DETECTION, MITIGATION AND DISPOSITION PROGRAM

A049 SUPPLIER AWARENESS

Terms & Condition of Purchasing(Suppliers) and Procurement Quality Clauses are an integral part of our AS9100 requirements. To learn in detail, please visit [www.dartaerospace.com](http://www.dartaerospace.com) for further explanation.

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200 Aurora Industrial Pkwy  
Aurora OH 44202-8087  
330-995-5500  
cle.sales@mcmaster.com

Dart Aerospace Ltd  
1270 Aberdeen St  
Hawkesbury ON K6A 1K7  
Canada

Purchase Order  
**PO039799**

Order Placed By  
**Chantal Lavoie**

McMaster-Carr Number  
**3155178-01**

Page 1 of 2

05/04/2018

Line	Product	Ordered	Shipped
3	<b>91247A740</b> Medium-Strength Grade 5 Steel Hex Head Screw, Zinc-Plated, 1/2"-13 Thread Size, 8" Long, Partially Threaded, Packs of 5	2 Packs	2
5	<b>92196A341</b> 18-8 Stainless Steel Socket Head Screw, 5/16"-24 Thread Size, 1" Long, Packs of 25	1 Pack	1
7	<b>2416K97</b> Fatigue-Resistant 301 Stainless Steel, Strip, 0.031" Thick, 3/4" Wide, 10 Feet Long	2 Each	2
17	<b>8932K45</b> Oil-Filled 841 Bearing Bronze Rod, 1" Diameter, 6-1/2" Long	4 Each	4

Shipped separately from our Cleveland warehouse on 05/04

1	<b>90985A113</b> Knob-Grip Push-Button Quick-Release Pin, 1/4" Diameter, 1-1/2" Usable Length	6 Each	6
2	<b>91247A122</b> Medium-Strength Grade 5 Steel Hex Head Screw, Zinc-Plated, 5/16"-24 Thread Size, 3" Long, Partially Threaded	2 Packs	2
4	<b>98407A132</b> Side-Mount External Retaining Ring, Zinc Yellow-Chromate-Plated Steel, for 5/16" OD	1 Pack	1
6	<b>9657K122</b> Compression Spring, Zinc-Plated, Tempered, Closed Ends, 2" Long, 0.438" OD	1 Pack	1
8	<b>1217T42</b> Fatigue-Resistant 301 Stainless Steel Sheet, 12" x 36", 1/2 Hard Temper, 0.024" Thick	1 Each	1
9	<b>1217T45</b> Fatigue-Resistant 301 Stainless Steel Sheet, 12" x 36", 1/2 Hard Temper, 0.059" Thick	1 Each	1
10	<b>3777T12</b> 316 Stainless Steel Carabiner, Not for Lifting, 200 lbs. Capacity, 5/16" Thick, 15/16" Narrow-End Inside Width	4 Each	4
11	<b>89895K451</b> Smooth-Bore Seamless 304 Stainless Steel Tubing, 3/8" OD, 0.049" Wall Thickness, 8" Long	4 Each	4
12	<b>90146A059</b> Bent-Pull Clevis Pin with Hairpin Cotter Pin, Zinc-Plated Steel, 5/16" Diameter, 2-1/2" Usable Length	7 Each	7
13	<b>93695K58</b> Flame-Retardant Oil-Resistant Blended Buna-N Foam, Adhesive Back Strip, 1" x 50 Feet, 1/4" Thick	1 Each	1

# Packing List

200 Aurora Industrial Pkwy  
Aurora OH 44202-8087  
330-995-5500  
cle.sales@mcmaster.com

Dart Aerospace Ltd  
1270 Aberdeen St  
Hawkesbury ON K6A 1K7  
Canada

Purchase Order  
**PO039799**

Order Placed By  
**Chantal Lavoie**

McMaster-Carr Number  
**3155178-01**

Page 2 of 2

05/04/2018

Line	Description	Ordered	Shipped
14	<b>8203K61</b> High-Strength 630 Bronze, 1" Diameter, 3 Feet Long	<b>2</b> Each	<b>2</b>
15	<b>8203K81</b> High-Strength 630 Bronze, 1-1/4" Diameter, 3 Feet Long	<b>2</b> Each	<b>1</b>
16	<b>2889K21</b> MDS-Filled Cast Nylon Rod, 1" Diameter, 2 Feet Long	<b>3</b> Each	<b>3</b>





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Aurora OH 44202-8087  
330-995-5500  
cle.sales@mcmaster.com

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Hawkesbury ON K6A 1K7  
Canada

Purchase Order  
**PO039799**

Order Placed By  
**Chantal Lavoie**

McMaster-Carr Number  
**3155178-04**

Page 1 of 1

05/04/2018

Line	Product	Ordered	Shipped
1	<b>90985A113</b> Knob-Grip Push-Button Quick-Release Pin, 1/4" Diameter, 1-1/2" Usable Length	6 Each	6
2	<b>91247A122</b> Medium-Strength Grade 5 Steel Hex Head Screw, Zinc-Plated, 5/16"-24 Thread Size, 3" Long, Partially Threaded, Packs of 25	2 Packs	2
4	<b>98407A132</b> Side-Mount External Retaining Ring, Zinc Yellow-Chromate-Plated Steel, for 5/16" OD, Packs of 100	1 Pack	1
6	<b>9657K122</b> Compression Spring, Zinc-Plated, Tempered, Closed Ends, 2" Long, 0.438" OD, Packs of 12	1 Pack	1
10	<b>3777T12</b> 316 Stainless Steel Carabiner, Not for Lifting, 200 lbs. Capacity, 5/16" Thick, 15/16" Narrow-End Inside Width	4 Each	4
11	<b>89895K451</b> Smooth-Bore Seamless 304 Stainless Steel Tubing, 3/8" OD, 0.049" Wall Thickness, 8" Long	4 Each	4
12	<b>90146A059</b> Bent-Pull Clevis Pin with Hairpin Cotter Pin, Zinc-Plated Steel, 5/16" Diameter, 2-1/2" Usable Length	7 Each	7
13	<b>93695K58</b> Flame-Retardant Oil-Resistant Blended Buna-N Foam, Adhesive Back Strip, 1" x 50 Feet, 1/4" Thick	1 Each	1
16	<b>2889K21</b> MDS-Filled Cast Nylon Rod, 1" Diameter, 2 Feet Long	3 Each	3

Shipped separately from our Chicago warehouse on 05/04

3	<b>91247A740</b> Medium-Strength Grade 5 Steel Hex Head Screw, Zinc-Plated, 1/2"-13 Thread Size, 8" Long, Partially Threaded	2 Packs	2
5	<b>92196A341</b> 18-8 Stainless Steel Socket Head Screw, 5/16"-24 Thread Size, 1" Long	1 Pack	1
7	<b>2416K97</b> Fatigue-Resistant 301 Stainless Steel, Strip, 0.031" Thick, 3/4" Wide, 10 Feet Long	2 Each	2
15	<b>8203K81</b> High-Strength 630 Bronze, 1-1/4" Diameter, 3 Feet Long	2 Each	1
17	<b>8932K45</b> Oil-Filled 841 Bearing Bronze Rod, 1" Diameter, 6-1/2" Long	4 Each	4



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Dart Aerospace Ltd  
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Canada

Purchase Order  
**PO039799**

Order Placed By  
**Chantal Lavoie**

McMaster-Carr Number  
**3155178-05**

Page 1 of 1

05/04/2018

Line	Product	Ordered	Shipped
14	<b>8203K61</b> High-Strength 630 Bronze, 1" Diameter, 3 Feet Long	2 Each	2
15	<b>8203K81</b> High-Strength 630 Bronze, 1-1/4" Diameter, 3 Feet Long	2 Each	1

Shipped separately from our Chicago warehouse on 05/04

3	<b>91247A740</b> Medium-Strength Grade 5 Steel Hex Head Screw, Zinc-Plated, 1/2"-13 Thread Size, 8" Long, Partially Threaded	2 Packs	2
5	<b>92196A341</b> 18-8 Stainless Steel Socket Head Screw, 5/16"-24 Thread Size, 1" Long	1 Pack	1
7	<b>2416K97</b> Fatigue-Resistant 301 Stainless Steel, Strip, 0.031" Thick, 3/4" Wide, 10 Feet Long	2 Each	2
15	<b>8203K81</b> High-Strength 630 Bronze, 1-1/4" Diameter, 3 Feet Long	2 Each	1
17	<b>8932K45</b> Oil-Filled 841 Bearing Bronze Rod, 1" Diameter, 6-1/2" Long	4 Each	4

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1270 Aberdeen St  
Hawkesbury ON K6A 1K7  
Canada

Purchase Order  
**PO039799**

Order Placed By  
**Chantal Lavoie**

McMaster-Carr Number  
**3155178-02**

Page 1 of 2

05/04/2018

Line	Product	Ordered	Shipped
15	<b>8203K81</b> High-Strength 630 Bronze, 1-1/4" Diameter, 3 Feet Long	2 Each	1

Shipped separately from our Cleveland warehouse on 05/04

1	<b>90985A113</b> Knob-Grip Push-Button Quick-Release Pin, 1/4" Diameter, 1-1/2" Usable Length	6 Each	6
2	<b>91247A122</b> Medium-Strength Grade 5 Steel Hex Head Screw, Zinc-Plated, 5/16"-24 Thread Size, 3" Long, Partially Threaded	2 Packs	2
4	<b>98407A132</b> Side-Mount External Retaining Ring, Zinc Yellow-Chromate-Plated Steel, for 5/16" OD	1 Pack	1
6	<b>9657K122</b> Compression Spring, Zinc-Plated, Tempered, Closed Ends, 2" Long, 0.438" OD	1 Pack	1
8	<b>1217T42</b> Fatigue-Resistant 301 Stainless Steel Sheet, 12" x 36", 1/2 Hard Temper, 0.024" Thick	1 Each	1
9	<b>1217T45</b> Fatigue-Resistant 301 Stainless Steel Sheet, 12" x 36", 1/2 Hard Temper, 0.059" Thick	1 Each	1
10	<b>3777T12</b> 316 Stainless Steel Carabiner, Not for Lifting, 200 lbs. Capacity, 5/16" Thick, 15/16" Narrow-End Inside Width	4 Each	4
11	<b>89895K451</b> Smooth-Bore Seamless 304 Stainless Steel Tubing, 3/8" OD, 0.049" Wall Thickness, 8" Long	4 Each	4
12	<b>90146A059</b> Bent-Pull Clevis Pin with Hairpin Cotter Pin, Zinc-Plated Steel, 5/16" Diameter, 2-1/2" Usable Length	7 Each	7
13	<b>93695K58</b> Flame-Retardant Oil-Resistant Blended Buna-N Foam, Adhesive Back Strip, 1" x 50 Feet, 1/4" Thick	1 Each	1
14	<b>8203K61</b> High-Strength 630 Bronze, 1" Diameter, 3 Feet Long	2 Each	2
15	<b>8203K81</b> High-Strength 630 Bronze, 1-1/4" Diameter, 3 Feet Long	2 Each	1

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Canada

Purchase Order  
**PO039799**  
Order Placed By  
**Chantal Lavoie**

McMaster-Carr Number  
**3155178-03**

Page 1 of 1  
05/04/2018

Line	Product	Ordered	Shipped
8	<b>1217T42</b> Fatigue-Resistant 301 Stainless Steel Sheet, 12" x 36", 1/2 Hard Temper, 0.024" Thick	1 Each	1
9	<b>1217T45</b> Fatigue-Resistant 301 Stainless Steel Sheet, 12" x 36", 1/2 Hard Temper, 0.059" Thick	1 Each	1

Shipped separately from our Chicago warehouse on 05/04

3	<b>91247A740</b> Medium-Strength Grade 5 Steel Hex Head Screw, Zinc-Plated, 1/2"-13 Thread Size, 8" Long, Partially Threaded	2 Packs	2
5	<b>92196A341</b> 18-8 Stainless Steel Socket Head Screw, 5/16"-24 Thread Size, 1" Long	1 Pack	1
7	<b>2416K97</b> Fatigue-Resistant 301 Stainless Steel, Strip, 0.031" Thick, 3/4" Wide, 10 Feet Long	2 Each	2
15	<b>8203K81</b> High-Strength 630 Bronze, 1-1/4" Diameter, 3 Feet Long	2 Each	1
17	<b>8932K45</b> Oil-Filled 841 Bearing Bronze Rod, 1" Diameter, 6-1/2" Long	4 Each	4

# Packing List

200 Aurora Industrial Pkwy  
Aurora OH 44202-8087  
330-995-5500  
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Dart Aerospace Ltd  
1270 Aberdeen St  
Hawkesbury ON K6A 1K7  
Canada

Purchase Order  
**PO039799**

Order Placed By  
**Chantal Lavoie**

McMaster-Carr Number  
**3155178-02**

Page 2 of 2

05/04/2018

Line	Description	Ordered	Shipped
16	<b>2889K21</b> MDS-Filled Cast Nylon Rod, 1" Diameter, 2 Feet Long	<b>3</b> Each	<b>3</b>

## MATERIAL RECEIPT INSPECTION FORM

MATERIAL: MT-Nylon6-R1.000B PO / BATCH NO.: 039799/5068407  
 DATE: MAY 0 8 2018

MATERIAL CERT REC'D: YES  
 QUANTITY RECEIVED: 6  
 QUANTITY INSPECTED: 6  
 QUANTITY REJECTED: 0

THICKNESS ORDERED: 1.000  
 THICKNESS RECEIVED: 1.000  
 SHEET SIZE ORDERED: N/A  
 SHEET SIZE RECEIVED: N/A

DESCRIPTION	NCR (Check Y/N)		COMMENTS
SURFACE DAMAGE	<input checked="" type="checkbox"/> Y	<input checked="" type="checkbox"/> N	
CORRECT FINISH	<input checked="" type="checkbox"/> Y	<input checked="" type="checkbox"/> N	
CORROSION	<input checked="" type="checkbox"/> Y	<input checked="" type="checkbox"/> N	
CORRECT GRAIN DIRECTION	<input checked="" type="checkbox"/> Y	<input checked="" type="checkbox"/> N	
CORRECT MATERIAL PER M-DRAWING	<input checked="" type="checkbox"/> Y	<input checked="" type="checkbox"/> N	<u>Astm D5989</u>
CORRECT THICKNESS	<input checked="" type="checkbox"/> Y	<input checked="" type="checkbox"/> N	
PHOTO REQUIRED	<input checked="" type="checkbox"/> Y	<input checked="" type="checkbox"/> N	
CORRECT REF # TO LINK CERT	<input checked="" type="checkbox"/> Y	<input checked="" type="checkbox"/> N	<u>PO#039799 Part# 2889K21</u>
CORRECT MATERIAL IDENTIFICATION	<input checked="" type="checkbox"/> Y	<input checked="" type="checkbox"/> N	
CORRECT M# ON THE MATERIAL	<input checked="" type="checkbox"/> Y	<input checked="" type="checkbox"/> N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	<input checked="" type="checkbox"/> Y	<input checked="" type="checkbox"/> N	
DOES THIS REQUIRE AN EXTRUSION REPORT	<input checked="" type="checkbox"/> Y	<input checked="" type="checkbox"/> N	

CUT SAMPLE PIECE OF MATERIAL AND PREFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
	HRC	HRB	DUR A	DUR D	WEBSTER
TYPE OF MATERIAL					
SIZE OF TEST SAMPLE					
HARDNESS / DUROMETER READING					

testers located in the Quality Office

QC 18 INSPECTION	ENGINEERING SIGNOFF (if required)
INSPECTED BY: <u>DAS 11</u> DATE: <u>9-89 MAY 0 8 2018</u>	SIGNED OFF BY: _____ DATE: _____

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

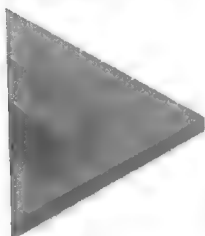
- Impact Strength: 0.7 ft-lbs/in (Poor)
- Performance: Outdoor Use
- Specifications: Meets ASTM D5989

The addition of MDS gives base cast nylon 6 rods a self-lubricating surface that's more slippery and wear-resistant than standard cast nylon. Use them to fabricate ways, bushings, bearings. They're lightweight, stiff, and easier to machine than other types of nylon. They are also an excellent insulator.

Dis	Tolerance Rating	Lengths, ft	Per Ft
1	Oversized	1, 2	2889K121 \$15.43
2	Oversized	1, 2	2889K131 17.90
3	Oversized	1, 2	2889K116 27.00
4	Oversized	1, 2	2889K126 40.80
5	Oversized	1, 2	2889K136 54.95
6	Oversized	1, 2	2889K146 71.23
7	Oversized	1, 2	2889K156 82.20
8	Oversized	1	2889K161 95.09
9	Oversized	1	2889K171 116.23

3716

### MDS-Filled Cast Nylon Sheets and Bars



**Sheets**

8 7 6 5 4 3 2 1

REV.	DESCRIPTION	DATE	BY	APPROVED
A	NEW ISSUE	17.08.23	VM	WM

## SPECIFICATION CONTROL DRAWING

PURCHASE MATERIAL:

NYLON 6 BAR

SPECIFICATION:

ASTM D5989

PART NUMBER:

MT-NYLON 6-B[H.HHH]x[W.WWW]-C

WHERE "H.HHH" = HEIGHT IN INCHES  
WHERE "W.WWW" = WIDTH IN INCHES  
WHERE "C" = COLOR [W= WHITE] / [B= BLACK]

EG. 1/4" x 2" WHITE BAR = MT-NYLON 6-B0.250x2.000-W  
TOLERANCES PER MANUFACTURER SPECIFICATIONS

<b>DART</b> AEROPAGE Windsorbury, Ontario, Canada	
TITLE NYLON 6 BAR	
ORG NO	REV
DESIGN BY: VM 8/9/2017	MT-NYLON 6-B
DRAWN BY: SAC 09/07/2017	A
CHECKED BY: VM 09/07/2017	FIGURES & DIMENSIONS
ENG APPR: PD 09/12/2017	1. UNLESS OTHERWISE SPECIFIED
QA APPR: PD 09/12/2017	2. INTERPRET DIM AND TOL PER
DATE: 9/7/2017	3. DIMENSIONAL LIMITS APPLY
SCALE: NTS	WEIGHT: N/A
SHEET 1 OF 1	
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THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS WITHOUT WRITTEN PERMISSION	

ECU 17-649

8 7 6 5 4 3 2 1



## MATERIAL RECEIPT INSPECTION FORM

MATERIAL: MBronz R1.000

PO / BATCH NO: 039799/5069443

DATE: MAY 08 2018

MATERIAL CERT REC'D: yes  
 QUANTITY RECEIVED: 2'  
 QUANTITY INSPECTED: 2'  
 QUANTITY REJECTED: 0

THICKNESS ORDERED: 1.000  
 THICKNESS RECEIVED: 1.000  
 SHEET SIZE ORDERED: N/A  
 SHEET SIZE RECEIVED: N/A

DESCRIPTION	NCR (Check Y/N)		COMMENTS
SURFACE DAMAGE	Y	(N)	
CORRECT FINISH	(Y)	N	
CORROSION	Y	(N)	
CORRECT GRAIN DIRECTION	(Y)	N	
CORRECT MATERIAL PER M-DRAWING	(Y)	N	<u>A57m B438</u>
CORRECT THICKNESS	(Y)	N	
PHOTO REQUIRED	Y	(N)	
CORRECT REF # TO LINK CERT	(Y)	N	<u>Ref # 893245 - P# 03249</u>
CORRECT MATERIAL IDENTIFICATION	(Y)	N	
CORRECT M# ON THE MATERIAL	(Y)	N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y	(N)	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y	(N)	

CUT SAMPLE PIECE OF MATERIAL AND PREFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
	HRC	HRB	DUR A	DUR D	WEBSTER
TYPE OF MATERIAL					
SIZE OF TEST SAMPLE					
HARDNESS / DUROMETER READING					

testers located in the Quality Office

QC 18 INSPECTION	ENGINEERING SIGNOFF (if required)
INSPECTED BY: <u>SAS 11</u> DATE: <u>9-89 MAY 08 2018</u>	SIGNED OFF BY: _____ DATE: _____

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

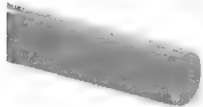


Specifications Met ASTM  
B438

Powdered bronze is pressed and then impregnated with SAE 30 oil to make this material self-lubricating. Use it to make bearings and parts for hard-to-reach areas that would be difficult for well pumps and turbine blades.

OD	Tolerance Rating	ID	3" Lg	6 1/2" Lg
<b>3/16" Wall Thick.</b>				
1"	Oversized	5/8"	8931K111	\$17.27 \$26.57
<b>1/4" Wall Thick.</b>				
1"	Oversized	1/2"	8931K121	18.27 28.11
1 1/8"	Oversized	5/8"	8931K131	22.57 34.73
1 1/4"	Oversized	3/4"	8931K141	24.27 37.34
1 1/2"	Oversized	7/8"	8931K151	28.14 43.29
1 3/4"	Oversized	1"	8931K161	30.66 47.17
2"	Oversized	1 1/8"	8931K171	31.26 48.09
2 1/4"	Oversized	1 1/4"	8931K181	36.08 55.51
2 1/2"	Oversized	1 1/2"	8931K191	41.83 64.35
<b>5/16" Wall Thick.</b>				
1 1/8"	Oversized	1/2"	8931K201	24.02 36.96
1 1/4"	Oversized	5/8"	8931K211	25.08 38.58
1 1/2"	Oversized	3/4"	8931K221	32.23 49.59
1 5/8"	Oversized	1"	8931K231	34.11 52.47
<b>3/8" Wall Thick.</b>				
1 1/2"	Oversized	1/2"	8931K241	25.81 39.70
1 3/4"	Oversized	5/8"	8931K251	33.56 51.63
2"	Oversized	3/4"	8931K261	32.28 49.66
2 1/4"	Oversized	7/8"	8931K271	38.42 59.11
2 1/2"	Oversized	1 1/8"	8931K281	42.00 64.62
2 3/4"	Oversized	1 1/4"	8931K291	50.56 77.78
3"	Oversized	1 1/2"	8931K301	53.57 82.42
3 1/4"	Oversized	1 3/4"	8931K311	58.79 90.44
3 1/2"	Oversized	2"	8931K321	68.12 104.80
3 3/4"	Oversized	2 1/4"	8931K331	82.73 127.27
<b>7/16" Wall Thick.</b>				
1 3/4"	Oversized	5/8"	8931K341	\$34.35 \$52.84
<b>1/2" Wall Thick.</b>				
1 1/2"	Oversized	1/2"	8931K351	37.06 57.02
1 3/4"	Oversized	3/4"	8931K361	43.90 67.54
2"	Oversized	1"	8931K371	48.93 75.28
2 1/4"	Oversized	1 1/4"	8931K381	58.86 90.55
2 1/2"	Oversized	1 1/2"	8931K391	61.91 95.25
2 3/4"	Oversized	1 3/4"	8931K401	68.61 105.55
3"	Oversized	2"	8931K411	78.49 120.76
3 1/4"	Oversized	2 1/4"	8931K421	87.10 134.00
3 1/2"	Oversized	2 1/2"	8931K431	92.86 142.86
3 3/4"	Oversized	3"	8931K441	102.80 158.15
<b>5/8" Wall Thick.</b>				
2"	Oversized	3/4"	8931K451	53.95 83.00
2 1/4"	Oversized	1 1/4"	8931K461	69.39 106.75
2 1/2"	Oversized	1 1/2"	8931K471	84.51 130.02
2 3/4"	Oversized	2"	8931K481	116.76 179.63
<b>11/16" Wall Thick.</b>				
2"	Oversized	5/8"	8931K491	56.20 86.46
<b>3/4" Wall Thick.</b>				
1"	Oversized	1/2"	8931K501	\$60.68 \$93.36
1 1/4"	Oversized	1"	8931K511	80.28 123.50
1 1/2"	Oversized	1 1/2"	8931K521	92.44 142.21
1 3/4"	Oversized	2"	8931K531	136.51 210.02
<b>7/8" Wall Thick.</b>				
3"	Oversized	1 1/4"	8931K541	97.87 150.57
3 1/2"	Oversized	1 3/4"	8931K551	133.25 205.00
<b>1" Wall Thick.</b>				
3"	Oversized	1"	8931K561	104.20 160.31
4"	Oversized	2"	8931K571	156.67 240.87
4 1/2"	Oversized	2 1/2"	8931K581	190.41 292.84
5"	Oversized	3"	8931K591	207.77 319.64
6"	Oversized	4"	8931K601	256.87 395.18
7"	Oversized	5"	8931K611	306.15 471.00
<b>1 1/2" Wall Thick.</b>				
6"	Oversized	3"	8931K621	327.13 503.27

## Oil-Filled 841 Bearing Bronze Rods



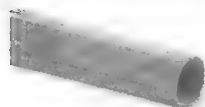
- Yield Strength: 11,000 psi
- Hardness: Not Rated
- Temperature: Not Rated
- Weight: 1.1 lb/ft
- Specifications Met: ASTM B438

Powdered bronze is pressed and then impregnated with SAE 30 oil to make this material self-lubricating. Use it to make bearings and parts for hard-to-reach areas that would be difficult to access for lubrication, such as well pumps and turbine blades.

Dia	Tolerance Rating	2" Lg	3" Lg	6 1/2" Lg
1/2"	Oversized	\$2 69		
3/4"	Oversized		\$6 00	
1"	Oversized		9 17	\$12 74
1 1/4"	Oversized		12 76	17 72
1 1/2"	Oversized		15 49	21 51
1 3/4"	Oversized		17 05	26 23
2"	Oversized		21 12	32 50
2 1/4"	Oversized		22 63	34 81
2 1/2"	Oversized		27 20	41 84
2 3/4"	Oversized		31 85	49 00
3"	Oversized		35 00	53 85
3 1/4"	Oversized		41 39	63 67
3 1/2"	Oversized		44 88	69 04
3 3/4"	Oversized		54 93	84 51
4"	Oversized		68 55	105 46
4 1/4"	Oversized		81 49	125 37
4 1/2"	Oversized		115 30	177 38
4 3/4"	Oversized		199 97	307 64
5"	Oversized		304 24	468 06
6"	Oversized		427 15	657 15

3889

Oil-Filled 841 Bearing Bronze Tubes



## MATERIAL RECEIPT INSPECTION FORM

MATERIAL: MT-Bronze-C63000-R1.250

PO / BATCH NO.: 039789/5069448

DATE: MAY 08 2018

MATERIAL CERT REC'D: yes  
 QUANTITY RECEIVED: 31  
 QUANTITY INSPECTED: 31  
 QUANTITY REJECTED: 0

THICKNESS ORDERED: 1.250  
 THICKNESS RECEIVED: 1.250  
 SHEET SIZE ORDERED: N/A  
 SHEET SIZE RECEIVED: N/A

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	Y (N)	
CORRECT FINISH	(Y) N	
CORROSION	Y (N)	
CORRECT GRAIN DIRECTION	(Y) N	
CORRECT MATERIAL PER M-DRAWING	(Y) N	<u>Astm B150</u>
CORRECT THICKNESS	(Y) N	
PHOTO REQUIRED	Y (N)	
CORRECT REF # TO LINK CERT	(Y) N	<u>Part #039789-Part #8203K81</u>
CORRECT MATERIAL IDENTIFICATION	(Y) N	
CORRECT M# ON THE MATERIAL	(Y) N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y (N)	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y (N)	

CUT SAMPLE PIECE OF MATERIAL AND PREFORM A HARDNESS CHECK.  
 RECORD RESULTS BELOW

	HRC	HRB	DUR A	DUR D	WEBSTER
TYPE OF MATERIAL					
SIZE OF TEST SAMPLE					
HARDNESS / DUROMETER READING					

testers located in the Quality Office

QC 18 INSPECTION	ENGINEERING SIGNOFF (if required)
INSPECTED BY: <u>DAS 11</u> DATE: <u>9-89 MAY 08 2018</u>	SIGNED OFF BY: _____ DATE: _____

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

8 7 6 5 4 3 2 1


REV.	DESCRIPTION	ECN #	DATE	BY	APPROVED
A	NEW ISSUE	17-787	17.12.12	VM	ML

# SPECIFICATION CONTROL DRAWING

*Handwritten signature*

PURCHASE MATERIAL:  
SPECIFICATION:  
PART NUMBER:  
EXAMPLE:

BRONZE C63000  
AMS 4640 OR ASME SB150 OR ASTM B150 OR SAE J461 OR SAE J463  
MT-BRONZE-C63000-R-[D.DDD]  
WHERE D.DDD IS DIAMETER IN INCHES  
1/4" ROUND BRONZE C63000 = MT-BRONZE-C63000-R-0.250



PART AEROSPACE

BRONZE C63000 ROUND BAR

PART NO MT-BRONZE-C63000-R

REV A

UNLESS OTHERWISE SPECIFIED:  
DIMENSIONS ARE IN INCHES  
DIMENSIONS IN PARENTHESES ARE METRIC EQUIVALENTS  
DIMENSIONS APPLY AFTER FINISHING

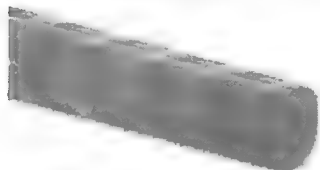
DESIGNED BY:	VM 17/12/12	TOLERANCES	FRACTIONS ± 1/16
DRAWN BY:	VM 12/12/2017	XX ± .01	XX ± .01
CHECKED BY:	ML 12/12/2017	XX ± .01	XX ± .01
INFO REVIEW BY:	DP 12/12/2017	XX ± .01	XX ± .01
APPROVED BY:	ML 12/12/2017	SCALE: NTS	SHEET 1 OF 1

THIS DOCUMENT IS THE PROPERTY OF PART AEROSPACE LTD.  
IT IS TO BE USED FOR THE PURPOSES SPECIFIED IN THE ORDER.  
IT IS NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM, WITHOUT THE WRITTEN PERMISSION OF PART AEROSPACE LTD.

4" Lg.

OD	Tolerance Rating	ID	Each	
3/16" Wall Thick.				
1"	Oversized	5/8"	1260N13	\$24.32
1 1/4"	Oversized	3/4"	1260N17	34.28
1/4" Wall Thick.				
1"	Oversized	1/2"	1260N11	29.75
1 1/8"	Oversized	5/8"	1260N15	32.00
1 1/2"	Oversized	1"	1260N21	41.45
1 3/4"	Oversized	1 1/4"	1260N27	47.52
2"	Oversized	1 1/2"	1260N31	51.45
3/8" Wall Thick.				
1 1/2"	Oversized	3/4"	1260N19	48.05
1 3/4"	Oversized	1"	1260N23	57.00
2"	Oversized	1 1/4"	1260N29	65.11
2 3/4"	Oversized	2"	1260N33	89.04
1/2" Wall Thick.				
2"	Oversized	1"	1260N25	74.20

## High-Strength 630 Bronze



- Yield Strength: 50,000 psi
- Hardness: Rockwell B90 (Medium)
- Temper: HR50
- Heat Treatable: No
- Specifications Met: ASTM B150

The addition of nickel gives 630 bronze high strength. Also called aluminum-nickel-bronze, it's an excellent choice for heavy-load applications, such as hydraulic valve parts and pump shafts.

Dia.	Dia. Tolerance Range		1 ft. Lg.	3 ft. Lg.	6 ft. Lg.
3/8"	-0.004" to 0.004"	8203K11	\$14.29	\$33.16	\$57.17
1/2"	-0.004" to 0.004"	8203K21	23.54	54.62	94.17
5/8"	-0.004" to 0.004"	8203K31	34.33	79.65	137.33
3/4"	-0.004" to 0.004"	8203K41	47.34	109.82	189.34
7/8"	-0.004" to 0.004"	8203K51	60.26	139.79	241.02
1"	-0.004" to 0.004"	8203K61	73.50	170.52	294.00
1 1/4"	-0.004" to 0.004"	8203K81	110.94	257.39	443.77
1 3/8"	-0.004" to 0.004"	8203K91	129.09	299.49	516.36
1 1/2"	-0.004" to 0.004"	8203K14	150.94	350.17	603.75

## Easy-to-Machine High-Strength 642 Bronze



- Yield Strength: 42,000 psi
- Hardness: Rockwell B65 (Soft)



## INSPECTION CERTIFICATE 3.1 TO EN 10204

Customer:	BUSBY METALS LLC 850 FREEPORT PARKWAY, SUITE 400 COPELL, TX U.S.A 75019 U.S.A.	Certificate No:	EI168000112.10
		Batch No:	160964
Alloy:	C63000	Order:	PO-20401388
		Quantity:	1940 lb
Specification:	ASTM B 150 -12 HR50, ASTM B 124 -14a, SAE AMS 4640H, QQ-C-465B AM1 ALUMINUM BRONZE ROD, BAR & SHAPES	Description:	ROUND RODS
		Size:	1.25"

### Chemical Composition in %

Element	Al	Cu +Ag	Fe	Ni + Co	Ni	Mn	Si	Sn	Zn	Others total
Required Min:	9.0	Rest	2.0	4.0	4.0	-	-	-	-	-
Required Max:	11.0	Rest	4.0	5.5	5.5	1.5	0.25	0.20	0.30	0.5
Measured value:	10.8	Rest	3.3	4.6	4.6	0.9	0.06	0.03	0.22	<0.5

### Mechanical Properties

Round from 1" up to 2" incl.

Test	Tensile strength		Yield strength at 0.5% Extension Under Load		Elongation	Hardness
	ksi	MPa	ksi	MPa	%	HB
Units:	ksi	MPa	ksi	MPa	%	HB
Required Min:	110	760	60	415	10	201
Required Max:	-	-	-	-	-	248
Measured value:	112	773	65	452	22	222

- REMARKS**
- 1: MERCURY FREE STATEMENT: Finkelstein Metals LTD does not knowingly expose material to mercury nor use mercury or mercury products in the production process.
  2. RoHS Compliance
  3. Ammonia Vapor Test passed as per ASTM B858
  4. Melted and Made in Israel

Pini Peker  
Quality control manager

24/05/2016  
Date of inspection

QA  
Signature

Finkelstein Metals LTD – AS9100C Certificate No 78023



21 Haistadion St. P.O.B 10031 • Haifa Bay, 2611001 • Israel • Tel. +972-4-8722547 • Fax +972-4-8720288  
www.finkelstein-metals.com • info@finkelstein-metals.com

BUSBY METALS, LLC | Order#:20320656 | Ship Date:3/13/2018

Customer:MCMaster-CARR SUPPLY COMP | PO#:LH-52904220 | CustPart#:





## MATERIAL RECEIPT INSPECTION FORM

MATERIAL: MT-Bronze-C63000-R1.250 PO / BATCH NO. 039799/5069341  
 DATE: MAY 08 2018

MATERIAL CERT REC'D: YES  
 QUANTITY RECEIVED: 31  
 QUANTITY INSPECTED: 31  
 QUANTITY REJECTED: 0

THICKNESS ORDERED: 1.250  
 THICKNESS RECEIVED: 1.250  
 SHEET SIZE ORDERED: N/A  
 SHEET SIZE RECEIVED: N/A

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	Y <input checked="" type="radio"/> N	
CORRECT FINISH	Y <input checked="" type="radio"/> N	
CORROSION	Y <input checked="" type="radio"/> N	
CORRECT GRAIN DIRECTION	Y <input checked="" type="radio"/> N	
CORRECT MATERIAL PER M-DRAWING	Y <input checked="" type="radio"/> N	<u>As per B150</u>
CORRECT THICKNESS	Y <input checked="" type="radio"/> N	
PHOTO REQUIRED	Y <input checked="" type="radio"/> N	
CORRECT REF # TO LINK CERT	Y <input checked="" type="radio"/> N	<u>PO # 039799 - Part # 8203K81</u>
CORRECT MATERIAL IDENTIFICATION	Y <input checked="" type="radio"/> N	
CORRECT M# ON THE MATERIAL	Y <input checked="" type="radio"/> N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y <input checked="" type="radio"/> N	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y <input checked="" type="radio"/> N	

CUT SAMPLE PIECE OF MATERIAL AND PERFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
	HRC	HRB	DUR A	DUR D	WEBSTER
TYPE OF MATERIAL					
SIZE OF TEST SAMPLE					
HARDNESS / DUROMETER READING					

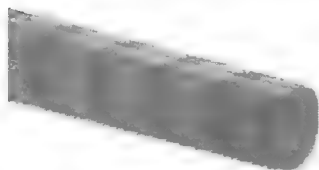
testers located in the Quality Office

QC 18 INSPECTION	ENGINEERING SIGNOFF (if required)
INSPECTED BY: <u>DAS 11</u> DATE: <u>9-89 MAY 08 2018</u>	SIGNED OFF BY: _____ DATE: _____

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

			4" Lg.	
OD	Tolerance Rating	ID	Each	
3/16" Wall Thick.				
1"	Oversized	5/8"	1260N13	\$24.32
1 1/4"	Oversized	3/4"	1260N17	34.28
1/4" Wall Thick.				
1"	Oversized	1/2"	1260N11	29.75
1 1/8"	Oversized	5/8"	1260N15	32.00
1 1/2"	Oversized	1"	1260N21	41.45
1 3/4"	Oversized	1 1/4"	1260N27	47.52
2"	Oversized	1 1/2"	1260N31	51.45
3/8" Wall Thick.				
1 1/2"	Oversized	3/4"	1260N19	48.05
1 3/4"	Oversized	1"	1260N23	57.00
2"	Oversized	1 1/4"	1260N29	65.11
2 3/4"	Oversized	2"	1260N33	89.04
1/2" Wall Thick.				
2"	Oversized	1"	1260N25	74.20

## High-Strength 630 Bronze

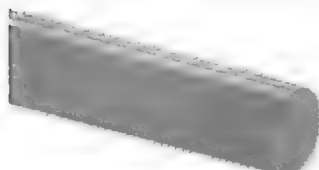


- Yield Strength: 50,000 psi
- Hardness: Rockwell B90 (Medium)
- Temper: HR50
- Heat Treatable: No
- Specifications Met ASTM-B150

The addition of nickel gives 630 bronze high strength. Also called aluminum-nickel-bronze, it's an excellent choice for heavy-load applications, such as hydraulic valve parts and pump shafts.

Dia.	Dia. Tolerance Range		1 ft. Lg.	3 ft. Lg.	6 ft. Lg.
3/8"	-0.004" to 0.004"	8203K11	\$14.29	\$33.16	\$57.17
1/2"	-0.004" to 0.004"	8203K21	23.54	54.62	94.17
5/8"	-0.004" to 0.004"	8203K31	34.33	79.65	137.33
3/4"	-0.004" to 0.004"	8203K41	47.34	109.82	189.34
7/8"	-0.004" to 0.004"	8203K51	60.26	139.79	241.02
1"	-0.004" to 0.004"	8203K61	73.50	170.52	294.00
1 1/4"	-0.004" to 0.004"	8203K81	110.94	257.39	443.77
1 3/8"	-0.004" to 0.004"	8203K91	129.09	299.49	516.36
1 1/2"	-0.004" to 0.004"	8203K14	150.94	350.17	603.75

## Easy-to-Machine High-Strength 642 Bronze



- Yield Strength: 42,000 psi
- Hardness: Rockwell B65 (Soft)

## SPECIFICATION CONTROL DRAWING

PURCHASE MATERIAL:

SPECIFICATION:

PART NUMBER:

EXAMPLE:

BRONZE C63000

AMS 4640 OR ASME SB150 OR ASTM B150 OR SAE J461 OR SAE J463

MT-BRONZE-C63000-R-[D.DDD]

WHERE D.DDD IS DIAMETER IN INCHES

1/4" ROUND BRONZE C63000 = MT-BRONZE-C63000-R-0.250

REV.	DESCRIPTION	ECN #	DATE	BY	APPROVED:
A	NEW ISSUE	17-787	17.12.12	VM	ML

<b>DART</b> AEROSPACE		Hamilton, Ontario, Canada	
TITLE <b>BRONZE C63000 ROUND BAR</b>			
PART NO.	MT-BRONZE-C63000-R	REV.	A
UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES DIMENSIONS APPLY AFTER FINISHING			
DESIGNED BY:	VM 17/12/12	TOLERANCES:	± 0.005
DRAWN BY:	VM 17/12/2017	ANGLES:	± 0.1
CHECKED BY:	ML 17/12/2017	SURFACE:	± 0.005
INFO REVIEW BY:	DP 17/12/2017	FINISH:	± 0.005
APPROVED BY:	ML 17/12/2017	SCALE:	1:1
COPYRIGHT © 2017 BY DART AEROSPACE LTD.		SHEET 1 OF 1	
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## MATERIAL RECEIPT INSPECTION FORM

MATERIAL: MT-Bronze C63000-R1.000

PO / BATCH NO.: 039799/5069340

DATE: MAY 0 8 2018

MATERIAL CERT REC'D: Yes  
 QUANTITY RECEIVED: 6'  
 QUANTITY INSPECTED: 6'  
 QUANTITY REJECTED: 0

THICKNESS ORDERED: 1.000  
 THICKNESS RECEIVED: 1.000  
 SHEET SIZE ORDERED: N/A  
 SHEET SIZE RECEIVED: N/A

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	Y (N)	
CORRECT FINISH	(Y) N	
CORROSION	Y (N)	
CORRECT GRAIN DIRECTION	(Y) N	
CORRECT MATERIAL PER M-DRAWING	(Y) N	<u>Astm B150</u>
CORRECT THICKNESS	(Y) N	
PHOTO REQUIRED	Y (N)	
CORRECT REF # TO LINK CERT	(Y) N	<u>PO #039799 Part #8203461</u>
CORRECT MATERIAL IDENTIFICATION	(Y) N	
CORRECT M# ON THE MATERIAL	(Y) N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y (N)	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y (N)	

CUT SAMPLE PIECE OF MATERIAL AND PREFORM A HARDNESS CHECK.  
 RECORD RESULTS BELOW

	HRC	HRB	DUR A	DUR D	WEBSTER
TYPE OF MATERIAL					
SIZE OF TEST SAMPLE					
HARDNESS / DUROMETER READING					

testers located in the Quality Office

QC 18 INSPECTION	ENGINEERING SIGNOFF (if required)
INSPECTED BY: <u>DAS 11</u> DATE: <u>9-89 MAY 0 8 2018</u>	SIGNED OFF BY: _____ DATE: _____

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

4" Lg.				
OD	Tolerance Rating	ID	Each	
3/16" Wall Thick.				
1"	Oversized	5/8"	1260N13	\$24.32
1 1/4"	Oversized	3/4"	1260N17	34.28
1/4" Wall Thick.				
1"	Oversized	1/2"	1260N11	29.75
1 1/8"	Oversized	5/8"	1260N15	32.00
1 1/2"	Oversized	1"	1260N21	41.45
1 3/4"	Oversized	1 1/4"	1260N27	47.52
2"	Oversized	1 1/2"	1260N31	51.45
3/8" Wall Thick.				
1 1/2"	Oversized	3/4"	1260N19	48.05
1 3/4"	Oversized	1"	1260N23	57.00
2"	Oversized	1 1/4"	1260N29	65.11
2 3/4"	Oversized	2"	1260N33	89.04
1/2" Wall Thick.				
2"	Oversized	1"	1260N25	74.20

## High-Strength 630 Bronze



- Yield Strength: 50,000 psi
- Hardness: Rockwell B90 (Medium)
- Temper: HR50
- Heat Treatable: No
- Specifications Met: ASTM B150

The addition of nickel gives 630 bronze high strength. Also called aluminum-nickel-bronze, it's an excellent choice for heavy-load applications, such as hydraulic valve parts and pump shafts.

Dia.	Dia. Tolerance Range		1 ft. Lg.	3 ft. Lg.	6 ft. Lg.
3/8"	-0.004" to 0.004"	8203K11	\$14.29	\$33.16	\$57.17
1/2"	-0.004" to 0.004"	8203K21	23.54	54.62	94.17
5/8"	-0.004" to 0.004"	8203K31	34.33	79.65	137.33
3/4"	-0.004" to 0.004"	8203K41	47.34	109.82	189.34
7/8"	-0.004" to 0.004"	8203K51	60.26	139.79	241.02
1"	-0.004" to 0.004"	8203K61	73.50	170.52	294.00
1 1/4"	-0.004" to 0.004"	8203K81	110.94	257.39	443.77
1 3/8"	-0.004" to 0.004"	8203K91	129.09	299.49	516.36
1 1/2"	-0.004" to 0.004"	8203K14	150.94	350.17	603.75

## Easy-to-Machine High-Strength 642 Bronze



- Yield Strength: 42,000 psi
- Hardness: Rockwell B65 (Soft)

8 7 6 5 4 3 2 1

REV.	DESCRIPTION	ECN #	DATE	BY	APPROVED
A	NEW ISSUE	17-787	17.12.12	VM	ML

## SPECIFICATION CONTROL DRAWING

PURCHASE MATERIAL: BRONZE C63000  
 SPECIFICATION: AMS 4640 OR ASME SB150 OR ASTM B150 OR SAE J461 OR SAE J463  
 PART NUMBER: MT-BRONZE-C63000-R-[D.DDD]  
 WHERE D.DDD IS DIAMETER IN INCHES  
 EXAMPLE: 1/4" ROUND BRONZE C63000 = MT-BRONZE-C63000-R-0.250

 <b>DART AEROSPACE</b> Hamilton, Ontario, Canada	
TITLE <b>BRONZE C63000 ROUND BAR</b>	
PART NO. <b>MT-BRONZE-C63000-R</b>	REV. <b>A</b>
UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES DIMENSIONS APPLY AT 150 FPM	
DESIGNED BY: VM 17/12/12 DRAWN BY: VM 17/12/12 CHECKED BY: ML 17/12/12 MFG REVIEW BY: DP 17/12/12 APPROVED BY: ML 17/12/12	INITIALS AND DATE TOLERANCES: FRACTIONS ±.010 DECIMALS ±.005 ANGLES ±.01 SURFACE ROUGHNESS SCALE: NTS SHEET 1 OF 1
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8 7 6 5 4 3 2 1